CLAIMS

1. A detector of an absolute rotation angle and torque, the detector comprising:

a torsion-bar unit including an input shaft, an output shaft and a torsion bar;

a first gear coupled to the input shaft;

a gear A engaging with the first gear;

a first detecting section, placed at a center of gear A, for detecting an absolute rotation angle;

a second gear coupled to the output shaft;

a gear B engaging with the second gear; and

a second detecting section, placed at a center of gear B, for detecting an absolute rotation angle.

2. The detector of an absolute rotation angle and torque of claim 1, wherein the first detecting section includes a first magnet and a first detecting element of magnetism confronting the first magnet.

3. The detector of an absolute rotation angle and torque of claim 1, wherein the second detecting section includes a second magnet and a second detecting element of magnetism confronting the second magnet.

4. The detector of an absolute rotation angle and torque of claim 1,

wherein the first and the second gears have an identical number of teeth and the gear A has a different number of teeth from that of the gear B,

wherein an absolute rotation angle is calculated from a difference

between respective absolute angles of the gear A and the gear B,

wherein torque is calculated from a difference between an absolute rotation angle of gear A and that of gear B multiplied by the teeth ratio of the gear A vs. the gear B.

5. The detector of an absolute rotation angle and torque of claim 1,

wherein the first gear has a different number of teeth from that of the second gear, and the gear A and the gear B have an identical number of teeth,

wherein an absolute rotation angle is calculated from a difference between respective absolute angles of the gear A and the gear B,

wherein torque is calculated from a difference between an absolute rotation angle of gear A and that of gear B multiplied by the teeth ratio of the first gear vs. the second gear.

6. The detector of an absolute rotation angle and torque of claim 4, wherein respective initial absolute rotation angles of gear A and gear B are stored in advance in a nonvolatile memory, and rotation angles starting from those angles stored are regarded as respective absolute rotation angles of the gear A and the gear B and used for calculating an absolute rotation angle and torque.

7. The detector of an absolute rotation angle and torque of claim 4, wherein a correction angle is stored in a nonvolatile memory in advance, which correction angle is a respective difference between correct absolute rotation angles of the gears A, B and absolute rotation angles calculated by the first and the second detecting elements of magnetism,

wherein each one of the correction angles stored are added to the respective absolute rotation angles calculated by the first and the second detecting elements, and the angles added are regarded as respective absolute rotation angles of the gear A and the gear B and used for calculating an absolute rotation angle and torque.

8. The detector of an absolute rotation angle and torque of claim 4, wherein the detector gives a warning of an abnormality when a difference between an absolute rotation angle of the gear A and that of the gear B multiplied by teeth ratio of the gear A vs. the gear B exceeds a predetermined allowance.

9. The detector of an absolute rotation angle and torque of claim 5, wherein the detector gives a warning of an abnormality when a difference between an absolute rotation angle of the gear A and that of the gear B multiplied by a teeth ratio of the first gear vs. the second gear exceeds a predetermined allowance.